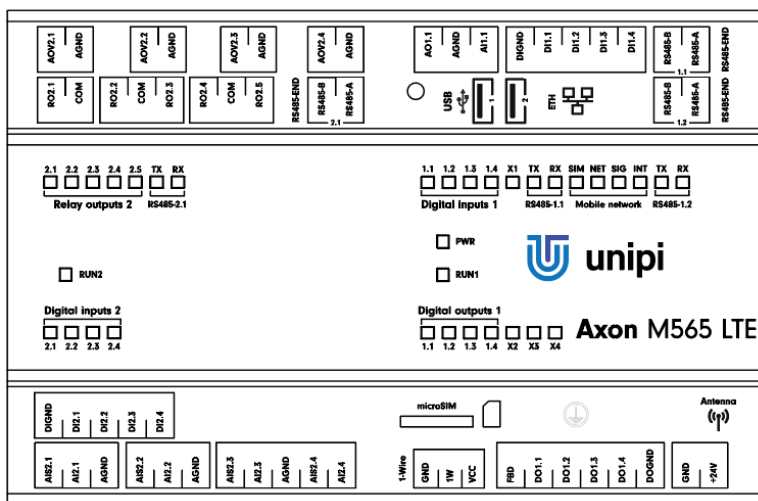**unipi technology**

Unipi Axon M565 LTE

PRODUCT DESCRIPTION

Unipi Axon M565 is a programmable logic controller (PLC) designed for automation, control, regulation and monitoring. The M565 is an intermediate model of the Axon 500 line focused on a higher number of analog I/O, but also features a sufficient number of all inputs/outputs available on Unipi products (digital, relay). That makes it suitable for complex projects including measurements and control of analog components A special feature of the controller is an LTE functionality for a high-speed wireless connection to the internet including sending/receiving SMS messages. The M565 also features three RS485 serial interfaces for connection of extension modules or gateways and a 1-Wire interface for connection of digital temperature or humidity sensors.

COMPUTING MODULE

Allwinner H5 1.2 GHz quad-core CPU, 1GB RAM, 8GB eMMC onboard memory

FEATURES

Inputs/outputs
8 × digital input incl. counter
4 × digital output
5 × relay output
5 × analog input
5 × analog output

Software
- Powered by OS Linux
- Mervis – IDE (IEC 61131-3), HMI editor, proxy server, cloud database, SCADA, wide range of supported protocols
- Open-source solutions – Node-RED, openHAB, Homebridge, FHEM, PiDome, DomotiGa, Domoticz, Pimatic and many more
- Custom SW implementation– EVOK open API, Modbus TCP interface, SysFS

FUNCTIONALITY

Automation, IoT and IIoT, remote online monitoring and regulation, HVAC control, SCADA, sensorics, smart home control (lighting, doors, locks, irrigation etc.)

Communication interfaces
3 × RS485
1 × 1-Wire bus
1 × 1Gbit Ethernet
2 × USB 2.0
1 × LTE interface

Other features
- Built-in webserver
- Special functions – Direct Switch, MasterWatchdog, user LEDs
- Durable aluminium chassis (IP20)
- Extended operating temperature range
- Available in an OEM variant
- Custom development available (IQRF, LoRa, wM-Bus, ZigBee, EnOcean and more)

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Unipi Axon M565 LTE

• Communication

Ethernet	1× 1Gbit Ethernet
Serial/bus channels	3 × RS485, 1 × 1-Wire
RS485 1.1, 2.1 transmission speed	134 baud .. 115 200 baud
RS485 1.2 transmission speed	50 baud .. 3 Mbaud
RS485 galvanic isolation	Yes
RS485 biasing resistors	Yes, 560 Ω
RS485 terminating resistor	Builtin attachable, 120 Ω
1-Wire galvanic isolation	Yes
1-Wire output voltage Vcc	5 V
1-Wire max. current Vcc	50 mA
1-Wire connector	3 × pole, max. 1.5 mm^2
WiFi	IEEE 802.11 b/g/n
Bluetooth	4.0, Low Energy (BLE)
WiFi/Bluetooth antenna	Internal
USB	2 × USB 2.0
LTE category	4 (150 Mbit / 50 Mbit)
Frequency bands	1, 2, 3, 5, 7, 8, 20
UMTS category HSDPA/HSUPA	24/6
GPRS/EDGE class	12
SIM card type	microSIM
LTE antenna connector	SMA

• Digital inputs

Nr.of inputs × groups	4 × 2
Common connector	DIGND
Galvanic isolation	Yes
Functions of inputs	Counter (incl. memory), signalization, Direct Switch
Max. frequency of counter input signal	10 kHz
Input voltage of log. 0	Max. 3 V DC
Input voltage of log. 1	Min. 7 V DC
Max. input voltage	35 V DC
Input resistance	6 200 Ω
Delay 0–>1/1–>0	20 µs / 60 µs

• Digital outputs

Nr.of outputs × groups	4 × 1
Common connector	DOGND
Galvanic isolation	No
Type of output	NPN transistor (open collector)
Optional functions	PWM
Switchable voltage	5–50 V DC
Switchable current continual/pulse	750 mA / 1 A
Max. total current DO 1.1–1.4	1 A
PWM max. frequency	200 kHz
PWM max. resolution	16 bits

• Relay outputs

Nr.of outputs × groups	1 × 2, 2 × 2
Galvanic isolation	Yes
Type of contact	Normally open (SPST)
Switchable voltage	250 V AC / 30 V DC
Switchable current	5 A
Short time overvoltage	5 A
Current via common conn.	10 A
Time to switch on/off	10 ms
Mechanical lifetime	5 000 000 cycles
Electrical lifetime	100 000 cycles
Protection against shortage	No
Inductive load protection	Not included
Isolation voltage	4 000 V AC

• Analog inputs

Nr.of inputs × groups	1 × 1	4 × 1
Common connector	AGND	AGND
Available functions	0–10 V 0–20 mA	0–10 V / 0–2.5 V 0–20 mA 0–1960 Ω 0–100 kΩ
Galvanic isolation	No	Yes
Resolution	12 bits	16 bits — U, I 24 bits — R
Conversion speed	10 µs	60 µs — U, I 400 ms — R
Input resistance	66 kΩ — U 100 Ω — I	44 kΩ — U 100 Ω — I
Resistance measurement method	—	2/3wire

• Analog outputs

Nr.of outputs × groups	1 × 1	4 × 1
Common connector	AGND	AGND
Available functions	AO 0–10 V / 0–20mA Resistance measurement: 0–2 kΩ (Pt/Ni1000)	0–10 V
Galvanic isolation	No	Yes
Max. voltage/current	10 V / 20 mA	10 V / 25 mA
Resolution	12 bits	12 bits
Conversion speed	1 ms	300 µs
Resistance measurement method	2wire	—

• Power supply

Rated voltage - SELV	24 V DC
Power consumption	Typ. 11 W Max. 20 W
Reverse polarity protection	Yes

• Installation and operating conditions

Operating conditions	0 °C .. + 70 °C, relative humidity 10 % .. 95 %, without agressive substances, condensing vapor and fog
Storing conditions	- 25 °C .. + 70 °C, relative humidity 10 % .. 95 %, without agressive substances, condensing vapor and fog
Degree of protection IP (IEC 529)	IP 20
Operation position	Horizontal
Installation	On 35mm DIN rail into distribution box (holder included)
Connection	Pluggable terminal blocks
Wire gauge	Max. 2.5 mm^2

• Dimensions and weight

Dimensions	140 × 90 × 60 mm
Weight	373 g

• Standards compliance

IEC 60950-1-1:2005 (ed.2)
EN60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + AC:2011 + A2:2013
EN62311: 2008
IEC 62368-1:2014 (ed.2)
EN 62368-1:2014
ČSN EN 60730-1 ed.3:2012
EN 301 489-1 V2.1.1
EN 301 489-52 V1.1.0
EN 301 511 Ver 12.5.1
EN 301 908-1 V11.1.1, EN 301 908-2 V11.1.2, EN 301 908-13 V11.1.2